

# BOARD QUESTION PAPER : MARCH 2013

## SCIENCE

Time: 2  $\frac{1}{2}$  Hours

Marks: 60

**Note:**

- Use the same answer-sheet for Section A and Section B.
- Draw well-labelled diagrams wherever necessary.
- All questions are compulsory.
- Students should write the answers of questions in sequence.

### SECTION A

1. (A) **Fill in the blanks:** [2]

- The chemical formula of rust is \_\_\_\_\_
- The law used by Newlands to arrange elements is known as \_\_\_\_\_

(B) **State whether the following statements are True or False:** [2]

- The pH of rain water is 7.
- The SI unit of charge is volt.

(C) **Rewrite the following table so as to match the second and third columns with the first column:** [3]

	Column I	Column II	Column III
1.	Dispersion	Long-sightedness	Twinkling of stars
2.	Refraction	Splitting of white light into component colours	Convex lens
3.	Hypermetropia	Change in the direction of ray of light due to change in medium	Spectrum of seven colours

2. **Answer the following questions:** [6]

- Distinguish between Conductors and Insulators.
- Why should the wires carrying electricity not be touched bare-footed?
- Calculate the Focal length of a corrective lens having power + 2.5 D.

3. **Answer the following questions (any four):** [12]

- The atomic masses of three elements A, B and C having similar chemical properties are 7, 23 and 39 respectively.
  - Calculate the average atomic mass of elements A and C.
  - Compare the average atomic mass with atomic mass of B.
  - What could the elements A, B and C be?
- When the substance 'A' is added to a solution of  $\text{BaSO}_4$  a yellow precipitate is formed.
  - What do you think substance A is likely to be?
  - Name the precipitate.
  - Which type of reaction is this?
- A person has sour taste in mouth and heart burn.
  - What is he suffering from?
  - Why does it happen?
  - What substance is used as remedy?
- Write any three properties of magnetic lines of force.
- Explain how the formation of rainbow occurs.

4. **Answer the following (any one):** [5]
1. What is myopia? Explain two possible reasons of myopia. How can it be corrected? Explain with suitable diagram.
  2. Find the expression for the resistors connected in series. Write any two characteristics of series combination of resistors.

**SECTION B**

5. (A) **Fill in the blanks:** [2]
1. Dominant character masks the \_\_\_\_\_ characters.
  2. \_\_\_\_\_ artery takes the blood to the lungs for oxygenation.

- (B) **State whether the following statements are true or false:** [3]
1. Roots of plants grow towards light.
  2. Hormones secreted by endocrine glands are directly released into blood stream.
  3. If X chromosome is inherited from mother and Y from father, the offspring will be male.

- (C) **Write structural formula of Methane.** [1]

- (D) **Name the following:** [1]  
Metals which forms an amphoteric oxide.

6. **Answer the following sub-questions:** [6]
1. 'A' is an element having four electrons in its outermost orbit. An allotropes 'B' of this element is used as a dry lubricant in machinery and in pencil leads. So:
    - i. Write the name of element 'A' and its allotropes.
    - ii. State whether 'B' is a good conductor or non-conductor of electricity?
  2. 'E' is an element which reacts with oxygen to form an oxide  $E_2O$ . An aqueous solution of  $E_2O$  turns red litmus blue, so:
    - i. What is the nature of oxide  $E_2O$  ?
    - ii. Write the name of element 'E'.
  3. Write two points of differences between arteries and veins.

7. **Answer the following questions (any four) :** [12]
1. Write any three differences between metals and non-metals with respect to their physical properties.
  2. Define:
    - i. Saturated hydrocarbon;
    - ii. Unsaturated hydrocarbon;
    - iii. Catenation.
  3. Write the names and functions of three parts of human nervous system in which it is divided.
  4. What is meant by sexual reproduction? Name its two main processes.
  5. Name any three parts of the female reproductive system in human beings. Write one function of each.

8. **Write the answer of any one question given below:** [5]
1. Write names of different parts of human digestive system and explain functions of any three parts.
  2. Answer the following:
    - i. Draw a diagram of DNA showing genes.
    - ii. What are peculiarities of its structure?